

**The United States Patent and Trademark Office
On Appeal From The Examiner To The Board
of Patent Appeals and Interferences**

In re Application of: Albert (nmi) Chan
Serial No.: 10/663,207
Filing Date: September 15, 2003
Group Art Unit: 1733
Confirmation No.: 2364
Examiner: John L. Goff II
Title: Thermal Interface Adhesive

Mail Stop: Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Dear Sir:

Reply Brief

Appellant respectfully submits this Reply Brief under 37 C.F.R. § 41.41(a)(1) in response to the Examiner's Answer electronically sent July 12, 2007.

Argument

In response to the Examiner's arguments in the Examiner's Answer, Appellant responds as follows. Specifically, Appellant will address the Examiner's arguments presented in the "Response to Argument" section of the Examiner's Answer (pp. 18-22).

First, the examiner responds to Appellant's argument regarding the term "harden" by citing paragraph 21 of the Nguyen reference (U.S. Patent Application Publication No. 2001/0038093). The examiner argues that the claim term "harden" is satisfied by Nguyen's disclosure of a "tough elastomer network" (Nguyen, para. 21). Appellants respectfully disagree. A tough elastomer network as described in Nguyen does not fit the meaning of "harden" as it is used in the present application. A general definition of "elastomer" is "any of various elastic substances resembling rubber" (Merriam-Webster Online Dictionary, <http://www.m-w.com/cgi-bin/dictionary?book=Dictionary&va=elastomer>). Furthermore, Nguyen specifically discloses that its disclosed resin mixture is cured to form a "compliant elastomer" (Nguyen, para. 20). Nguyen defines "compliant" as meaning a "material that is yielding and formable at room temperature, as opposed to solid and unyielding at room temperature" (Nguyen, para. 18). This is not a "hardened" material as required by the claims.

The Examiner's use of paragraph 22 of the specification to show otherwise is inapposite. Paragraph 22 requires that, after curing, the polymer should have "sufficient elasticity to absorb any stresses generated by thermal cycling or other mechanical causes." "Sufficient elasticity" is a relative qualifier that has to be read within the context of the stresses generated by thermal cycling and other mechanical causes. Thermal cycling involves differences between the thermal expansions of the different materials, which generally lead to differential changes in dimensions that are on the order of ten parts per million, which is much smaller than what is contemplated by this reference. It appears that the examiner is taking "sufficient elasticity" out of context and relating it to the materials of the Nguyen reference that have significantly greater elasticity. Paragraph 22 is not stating that the cured polymer mixture is an elastomer, as is clarified in the requirement of the claims that the curing process harden the polymer mixture.

Second, the examiner responds to Appellant's argument regarding the phase change polymer of Jayaraman et al. (U.S. Patent No. 6,926,955) by restating his arguments made with respect to the Nguyen reference regarding the term "harden." Appellants refer to the arguments made above in response to these restated arguments. In addition, the examiner continues to ignore the fundamental differences between the polymer of the present invention and a phase change polymer as described in Jayaraman et al. The examiner has argued that the phase change itself can be seen as "absorb[ing] any stresses generated by thermal cycling." This is contrary to the properties required of the polymer in the present invention and specifically to the requirements of paragraph 22 that include "good adhesion and ... sufficient elasticity to absorb any stresses generated by thermal cycling *or other mechanical causes*" (emphasis added). With respect to the Examiner's arguments regarding the addition of fluxing agents, the examiner has substantially restated his previous arguments that the addition of a fluxing agent would not destroy the function of Jayaraman et al., which has been addressed in the Appellant's Appeal Brief. The examiner has not provided any additional support for his contention that it would be obvious to use a fluxing agent with a phase change polymer, nor any showing that the function of the phase change polymer would not be impaired.


Third, in response to Appellant's argument regarding the lack of motivation for the combination of Nguyen and Jayaraman et al., the examiner has still failed to provide such motivation. The examiner states that the combination is shown "in the event it is shown Nguyen does not inherently teach reflow of the solder powder," but does not provide any further statements as to why one of ordinary skill in the art would be motivated to combine these references. At least some rationale or reasoning must be presented by the examiner in order to support this combination of references.

Conclusion

Appellant has demonstrated that the present invention, as claimed, complies with all statutory requirements for a U.S. Patent. Therefore, Appellant respectfully requests the Board to reverse the final rejection of the Examiner and instruct the Examiner to issue a Notice of Allowance with respect to all pending claims.

Appellant believes no fees are due. Nonetheless, the Commissioner is hereby authorized to charge any fee and credit any overpayment to Deposit Account No. 02-0384 of Baker Botts L.L.P.

Respectfully submitted,
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Date: September 11, 2007

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